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ABSTRACT

Results of two studies of microcomputer use for second language instruction at the secondary level are reported. The investigation is based on observations made at the University of Illinois' University High School, which serves academically talented students from the surrounding area. The school's computer laboratory uses software packages for French, German, Russian, and Spanish. It allows whole classes to use microcomputers simultaneously and permits use of a variety of software formats. It is concluded that computer-assisted language instruction is an excellent tool in the promotion of independent study and review that can result in better or more efficient learning. Learner characteristics seen as contributing to achievement are discussed in relation to previous research done at the university. The best software appears to be that which capitalizes on positive learner attributes. Programs that permit self-direction, provide appropriate feedback, encourage discovery about the language, and expand student awareness of the target culture are recommended. (Author/MSE)

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An Example of the Use of Microcomputers in Foreign Language Learning and Teaching from a High School for the Academically Talented.

Constance Curtin and Stanley Shinall

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IDEAL 2, 1987

AN EXAMPLE OF THE USE OF MICROCOMPUTERS IN FOREIGN LANGUAGE LEARNING AND TEACHING FROM A HIGH SCHOOL FOR THE ACADEMICALLY TALENTED

Constance Curtin and Stanley Shinall

This paper is based upon observations of secondary school students using foreign language programs on the microcomputer. The authors commend computer-assisted language instruction as an excellent tool in the promotion of independent, self-directed study and review which can result in better or more efficient learning. Learner characteristics seen as contributing to achievement are discussed in relation to previous research studies done at the University of Illinois. The best software seems to be that which capitalizes on positive learner characteristics and attributes, motivational factors. In addition to programs which permit self-direction, appropriate feedback, and encourage discovery about the language, those which expand student awareness of the target culture are expecially commended.

The purpose of this paper is to provide observations gained from curricular applications of the microcomputer in the foreign language program of the University High School at the University of Illinois, Urbana, Illinois. The school serves a population of academically talented students from Champaign and Urbana, Illinois, and the surrounding area with occasional enrollments of visiting foreign nationals. As an autonomous unit of the University under the directorship of Dr. Russell Ames, University High School serves as a laboratory site for research and development activities related to curriculum appropriate to students in middle and high school programs. In recent years, a major interest at the school has been the development of instructional materials for use on the microcomputer by students in the foreign language curriculum. Through grants by the Apple Education Foundation and the NEH (C. Curtin, principal investigator) review packets in French, German, Russian, and Spanish have been prepared in Apple Pilot for use on the Apple II family of microcomputers.[1] More recently, through an award by the IBM Corporation in conjunction with a local EXCEL grant (S. Shinall, principal investigator), a microcomputer laboratory has been established. This laboratory enables whole classes to employ IBM PC's at the same time and permits the investigation of a variety of formats. The French and Russian programs have now been converted to IBM Pilot for use in that facility. The development of the programs and their use by students in various instructional settings have led to the observations contained in this paper.

There is no doubt that the pool of academically talented students observed tends to contain some strong language performers. In our discussion of computer-assisted language instruction (CALI), we do not mean to imply that it is the preferred mode of instruction. Neither do we wish to claim that strong student performance in this population is due to CALI. However, our observations lead us to believe that CALI is an excellent addition to the battery of available educational resources and thus should be exploited for what it brings.

In considering student achievement, two studies done at the University of Illinois, Urbana-Champaign, led to further investigation. One done by Avner, Curtin and

Smith (1983)) directly concerns the student population. All students entering University High School take the Pimsleur Language Aptitude Battery (1966) which measures of aptitude based upon phonetic coding ability, verbal and auditory sensitivity and also provides a measure of individual motivation. In each problem of the sound-symbol section of the Pimsleur Aptitude Test, students choose the word which they hear from a list of four written nonsense words. A comparison of the University High School students' performance with national norms for college-bound students (Pimsleur 1966) showed that the local population had a mean grade point average of 14.73 against the national grade point average of 11. In addition, the Pimsler sound-symbol score averaged 21.05 in the local group against the national college bound average score of 16.9. Our high average score suggests that students who have the ability to score higher (as measured by grades in our program) appear to have the ability to integrate visual and aural cues more efficiently than can the average or below-average performer.

A second study by Curtin, Avner and Provenzano (1981) based upon student responses in a main-frame (PLATO) program prepared for University of Illinois students of Russian. Student keyboard responses were collected and analyzed for several semesters to determine among other things, review time, error rate and interaction rate. It was found that students with both low error rates andhigh interaction rates had high grades and spent the most time reviewing at the computer. We are led to conjecture that the more successful language learners (where success is measured by grades) will also be those most capable of independent, self-directed review and that for them such review results in better or more efficient learning. If this is so, CALI programs developed for students are best when they capitalize upon the characteristics which seem to contribute to foreign/second language learning. Moreover, CALI authors should attempt to appeal to positive attributes which may be inspired, developed and reinforced in the learners, indeed enjoyed by them. Let us consider some of the things we have learned from observing students using CALI at the University High School.

First, they learn faster than others and so presumably can attain proficiency more rapidly. All students feel happier when they are engaged in the learning task. They do not particularly enjoy feeling pushed, but they do enjoy active learning. Therefore the pace or rate of instruction needs to suit the student. One way to fit the pace to the student in CALI is to provide a complete index (Figure 1).

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                    Verb Tense and Aspect

          Type the number of your choice and press ENTER:

1. Introduction to the Lesson      8. Which Aspect?  (in English)
2. Vocabulary Practice             9. Which Aspect?  (in Russian)
3. Past Tense                     10. Vocabulary Quiz on Verbs
4. Future Tense                   11. Soviet Republics Game
5. Aspect Discussion              12. Final Test
6. Forms of Aspectual Pairs       13. Disk Index
7. Aspect Contrast in English
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Figure 1. An example of a complete index allowing for choice in a range of areas progressing from the more simple to the more complex.

As we developed our programs, which are primarily independent review materials, we learned to structure the index using a laddered approach, that is, one which proceeds from more simple concepts and problems to more complex ones. Because most students enjoy the motivational aspects of a game, we placed our games at the end of the instructional sequences, so that to succeed in the game, the student would need to have learned the content of the lesson. We learned that students would frequently attempt the game first and would then be impelled to enter other parts of the program if only to be able to return to the game with the assurance of a better performance. At the end of each lesson index, we placed a final test, which could also serve as a pre-test. If students are able to score well on this test, they may elect to move to another review and proceed more rapidly or they may elect another activity. By giving students the freedom to choose, we have attempted to meet their need for independent decision-making, to allow them to proceed at their own rate, and to feel responsible for their own progress.

A second observation is that our successful foreign language students are sensitive to the process of learning taking place within themselves and are quick to ask questions about what they are learning. Changes take place both in the understanding and control of the language. Achievement paves the way for new learning, and the successful learner seems eager to apply what is learned and becomes impatient when application is not possible. At the same time, talented students are often quite sensitive to their perceptions of "lack of success." Just as teachers in oral communicative situations in the classroom must encourage students without demolishing self-esteem, CALI must provide appropriate feedback and help to build self-confidence through facilitating an understanding of concept and application. Talented students need both inspiration and challenge so that they are continuously drawn ahead in the learning process. An example of CALI designed to do this is found in the Russian Review Packet lesson treating the Accusative and Locative Cases.1 In one lesson segment, after they have had the opportunity to gain control of the case forms in isolation, students are required to apply their understanding not only of form but of usage in answering a question. The preposition and case required in the response show either that the verb in the question indicates a static location (locative) or motion toward a location (accusative). The cue noun is in the nominative case, and helps are available. The inspiration to apply what has been learned comes in the form of the game-like format which consists of a map of Moscow. Successful responses cause a blinker to show the location of the site named in the question. This approach--combining task, appropriate helps and feedback with tangible reward (new knowledge)--has been one of those most appreciated by talented students (Figure 2).

The foregoing observation leads directly to the third: talented language students enjoy discovery. Successful language learners we have observed use their ability to analyse and to apply logic to problem solving. Such students are adept at following logical developments of concepts to grasp and to retain structural concepts which may hinge upon contrasts of English and the language studied. CALI can be an important tool for such students as they see displayed, and are given opportunity to interact with, examples which show how language conveys meaning. Case, verb, tense, and form are made immediately accessible. Teachers of more commonly taught languages can well appreciate such applications (subject-verb agreement, pronoun form, idiomatic tense uses, contrasts between preterite and imperfect, for example). Teachers of highly inflected languages can see even more subtle applications. In Russian, for example, the teaching of aspect poses particular difficulties to the learner. Here again the computer provides a magnificent tool for teaching logically and incrementally. In the Russian Review Packets, students are helped through a series of steps (first in English, then in Russian) designed to help them "discover" aspect (Figure 1).

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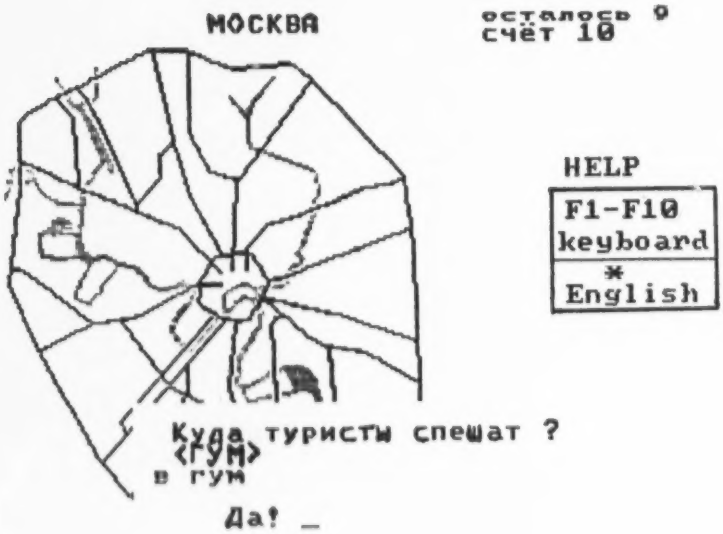

Figure 2. An example of a game requiring a conceptual understanding of case usage. Places of interest in Moscow are shown by a blinker as a reward for supplying the correct answer.

Discovery in the foreign/second language curriculum extends beyond a growing awareness of language for personal communication. It involves an appreciation of different societies and cultures directly related to the target language and, beyond them, of the world. CALI offers opportunites to use target language forms to instruct in daily life, traditions, and customs as well as in the politics, history and economy of other nations or language groups. The students we have observed especially enjoy encountering such material in game format in which they may learn things related to geography (rivers of the Soviet Union), tourist interest and travel (Moscow, Paris, Vienna), or combinations of these features (Figure 3). In such lessons, instead of learning isolated facts, the students are applying their language skills in a context which allows them to reach a broader understanding of the world in which they live.

As an extension, at present the authors are developing programs designed to enable students to work their way through sequences of authentic cultural settings. Students select a response from among several alternatives containing idiomatic language appropriate to a particular setting. Sequences of scenes develop a situation likely to be encountered in the target culture.

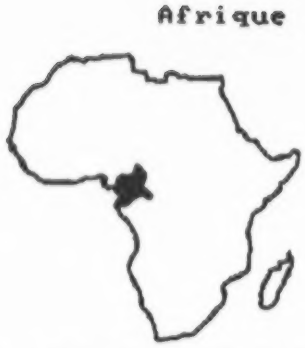

Figure 3. An example of "discovery" about franco- phone Africa. The typing of the correct expression is rewarded with a fill of the country's location and a translation of the sentence.

In conclusion, what we have learned from observing talented language students is informative for the preparation of CALI for language students in general, including future teachers. Software which allows for self-direction, which provides appropriate help and feedback, and which uses what has been learned as a building tool to increased knowledge can enlist language to expand student understanding of the target culture. It follows that CALI materials, prepared with such syntheses of language and culture as its aim, can provide an efficient and economical tool capable of making an instructional impact both on the learner and on the curriculum.

NOTE

[1]The Review Packets are published by COMPress, a Division of Wadsworth, Box 102, Wentworth, NH 03282.

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